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How Have Financialization and Offshoring Affected the Firm's Investment in Korea?

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Abstract

This paper examines how firm's investment has been affected by offshoring and financialization in Korea over the period 2000-2014 by using industry-level data collected from World Input Output Database (WIOD) and firm-level data collected from the KIS-Value Database. The findings are summarized as follows. First, offshoring index as expected shows a negative relationship with real investment. This negative impact is stronger in a large firm group. Second, there is a positive relationship between dividend payments and real investment. The positive relationship is greater in a small & medium-sized firm group. Third, the purchase of financial assets and the income generated from financial assets are positively related to real investment. The positive relationship is stronger in the small & medium-sized firm group. The empirical results show that firm size is a factor that effectively affects firm's real investment. This paper suggests that the influence of financialization and offshoring on firm's real investment should be assessed in various contexts rather than in a unilateral context.

Keywords: Financialization, Offshoring, Real Investment, World Input Output Database (WIOD)
JEL Classifications: D2, E22, O16

Ⅰ. Introduction

Financialization and offshoring[1)] have risen in the global economy over the last few decades. Their negative impacts on employment and real investment in developed economies have widely been reported. In con22trast, the discourse on financialization and its impact on real investment in Korea is limited. The

1) Often offshoring and outsourcing are interchangeable. Whereas outsourcing refers to the relocation of jobs and processes to external providers regadless of the provider's location, offshoring refers to the relocation of jobs and processes to any foreign country without distinguishing whether the provider is external or affiliated with the firm (Olson, 2006, 6). Offshoring fits better to the analytical purpose of this paper.

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influence of offshoring over real investment has rarely been conducted. Furthermore, no study has paid attention to the possibility that the impact of financialization and outsourcing in real investment would be different depending on firm size. Large firms and small & medium-sized firms (SME) are likely to apply different criteria when they decide their real investment plan.

Maximizing shareholder value has created two features that have become apparent in the global economy over the last twenty years: financialization and offshoring. On the one hand, financialization referring to a trend that the growing influence of financial forces and financial markets on non-financial companies (NFCs) has made the cash flows of NFCs increasingly dependent upon financial investment (Alvarez, 2015; Stockhammer, 2004; Orhangazi, 2008; Crotty, 2003; Auvray and Rabinovich, 2017; Lin and Tomaskovic-Devey, 2013). This new trend has created an unprecedented pattern of financial flows in NFCs. Profits accrue primarily through financial channels rather than through the production and trade of commodities (Krippner, 2005, 174). It is argued that the stagnant wage share and real investment In developed economies for the last two decades results from financialization. On the other hand, offshoring having rapidly grown with extensive participation of developing economies in global value chains(GVCs) refers to (in) direct employment of foreign resources by on-shore firms according to their corporate strategy. Multinational corporations (MNCs) that have deployed stagnant domestic wage rates and productivity gains to absorb the increased pecuniary pressure from share-holders have sought offshoring as a way of extending markets or saving costs (Milberg, 2008; Lee and Gereffi, 2015; Demir, 2009; Orhangazi, 2008). This also is likely to cause stagnant on-shore real investment. Some argue that financialization and off-shoring have reinforced each other as MNCs have aggressively implemented offshoring over the course of financialization to seek for higher yields (Milberg and Winkler, 2010; Serfati, 2008; Milberg and Winkler, 2013). As examined above, despite the inherent interconnectedness of these two features, existing studies explain stagnant real investment putting either financialization or offshoring as an explanatory variable in their research. Considering the influence of both financialization and offshoring on the NFCs real investment, this paper investigates that any relationships among these variables have evolved over the last twenty years in Korea on the one hand and that these relationships show any differences depending on firm size on the other hand.

To capture the impact of financialization and offshoring on real investment, this paper considers both financialization variables such as dividend payments, the purchase of financial assets purchase, and the revenue generated by financial assets and offshoring index in the dynamic investment function. To estimate the variables both firm-level and industry-level data are employed because at present the data reflecting offshoring at the firm-level are not available. The firm-level data are collected from listed NFCs on KRX and KOSDAQ and the industry-level data from the World Input-Output Database (WIOD).

The findings of this paper are as follows: First, no crowding-out in real investment

caused by financialization is observed. The financialization variables-dividend payments, financial assets purchase, and returns on financial assets-carry positive signs, which contrasts the cases reported in the research on developed economies. It is likely that higher dividend payments that give positive signals to market participants help firms mobilize investment funds. Second, offshoring, in contrary to the financialization variables, crowds out real investment. Third, the impact of financialization on real investment and the degree of crowding-out of real investment differs according to firm size. For example, a bigger crowding-out in real investment is caused by offshoring in large firms in which the pressure from shareholders is relatively strong. Meanwhile, financialization variables, such as dividend payments, the purchase of financial assets, and the income generated from financial assets, show a weaker positive relationship to real investment in large firms than in the SME.

This paper reviews existing literature on how financialization and offshoring have influenced real investment and income share both in developed economies and in Korea in Section 2. The data collection and a dynamic investment function are explained in Section 3. Estimation results and discussion are provided in Section 4, followed by concluding remarks.

II. Literature Review

A body of literature can be divided into two streams: one is interested in financialization and its impact on NFCs real investment and the other in offshoring and its impact on employment and the wage share in national income. The main argument of the financialization studies is that financialization has made capital accumulation stagnant. Orhangazi (2008) points out that financialization affects real investment via two channels: Firstly, the transfer of earnings from NFCs to financial markets rather than to physical investment. For example, Stockhammer (2004) observes that the physical investment fell in the US and France, but not in Germany over the period 1960s-1990s. Secondly, the increasing flow of earnings of NFCs from their financial assets discourages real investment. For instance, the ratio of portfolio income to cash flow for the NFCs in the US rose from 8% to 40% during the period 1950-2001 (Krippner, 2005). A similar pattern is observed in France (Clévenot, Guy, and Mazier, 2010) and in the UK (Tori and Onaran, 2015).

On the other hand, the main argument of the offshoring studies is that it has weakened the negotiation power of laborer in setting the wage rate. As a result, the wage share in national income has declined and further deterioration in income distribution has occurred (Feenstra and Hanson, 1999; Foster-McGregor, Stehrer, and de Vries, 2013; Hijzen, Görg and Hine, 2005; Schwörer, 2013; Durand and Miroudot, 2015). Some studies observe that firms have tended to keep core part onshore and relocate or outsource non-core part offshore (Gereffi, Humphrey and Sturgeon, 2005; Lee and Gereffi, 2015; Schwörer, 2013; Serfati, 2008). This probably explain why the wage rate of low-skilled workers has been stagnant in developed countries.

Offshoring could also have an impact on real investment. For example, if offshoring aims to extend markets, it is likely to facilitate domestic investment whereas if it aims to save costs, it is unlikely to do so, which is observed in Canada (Hejazi and Pauly, 2003) and in Germany (Onaran, Stockhammer and Zwickl, 2013).[1)]

There was also a study that considered both financialization and offshoring, which was the work of Auvray and Rabinovich (2017). They incorporate both factors into the analysis of the capital accumulation of NFCs in the US by combining industry-level data from the WIOD and firm-level data to estimate an investment function. They argue that both offshoring and financialization are determinants to the decrease in real investment as well as that financialization occurs mainly for firms that belong to the sectors showing higher offshoring.

Compared to the financialization discourse in developed economies, the discussion of financialization has just emerged in Korea and only a limited number of existing studies are available. Cho Bok-Hyun (2007), Seo Hwan-Joo, Han-Sung Kim and Joon-Il Kim (2016), Seo Hwan-Joo and Joon-Il Kim (2013) and Kim Myung-Rok (2015), Kim Joon-Il (2017) have initiated the discourse on the relationship between firm investment and financialization. Cho Bok-Hyun (2007), Seo Hwan-Joo, Han-Sung Kim and Joon-Il Kim (2016), Seo Hwan-Joo and Joon-Il Kim (2013) admit that a drop in real investment in Korea is closely related to financialization. Cho Bok-Hyun (2007) argues that two features have led to a drop in real investment in Korea: one is the change occurred in corporate financial structure from the bank-based system to the capital market-based system after the 1997 Asian Financial Crisis, and the other is financialization that emphasizes financial profitability. Seo Hwan-Joo, Han-Sung Kim and Joon-Il Kim (2016), based on a panel analysis using 430 companies' data from 2000 to 2007, shows that the increase in financial payments such as dividend payments and share buyback have a close relationship to the decrease in real investment in Korea. An impact of financialization on the labor market is addressed in Seo Hwan-Joo and Joon-Il Kim (2013). They argue that financialization results in a higher wage elasticity of demand for labor and consequent deterioration of the wage share over the period 2002-2013. On the other hand, Seo Hwan-Joo, Han-Sung Kim and Joon-Il Kim (2016) argues with reservation that they fail to confirm correlations between the financial payments or financial income of firms and the decrease in real investment in Korea, but the stagnant real investment should be understood as an outcome of increased volatility or uncertainty that results from enhanced financial liberalization.

In contrast, Kim Myung-Rok (2015) provide a skeptical view on the financialization discourse in Korea. From a panel analysis of the financial data from 445 manufacturing companies listed on the KRX and the KOSDAQ from 2002 to 2013, he argues that the slowdown of real investment in Korea is not caused by financialization but by corporate strategies that aim at

1) In fact, the factors and the types of foreign investment are affected by (in)formal institutions and the strategies of the firms. In case of Korea, see Lee Eungo-Sok(2018), Lim Yong-Taek and Byeong-Su Goh (2016), for example.

acquiring and strengthening corporate ownership. As a result, real investment fell but it has been associated with the concentration of economic power in Korea. Furthermore, he argues that investment behavior of large firms is different from that of SME because they are exposed to different decision-making environment.

Regarding the research on the impacts of financialization and offshoring on real investment at the same time in Korea has rarely been conducted. At the time of writing this paper, Kim Joon-Il (2017) is the only available study. He, adopting the methodology used in Demir (2009), shows that the share of financial assets compared to that of tangible assets increased in Korean NFCs over the period 2004-2015. Moreover, the increased share of financial assets was led to higher rates of return. He concludes that the decline in real investment of NFCs results from the spread of financialization across the NFCs in Korea. He additionally points out that offshoring together with financialization has enhanced the stagnant real investment in Korea. However, due to the limitations of data related to offshoring, he can consider only 'processing costs paid to subcontractor' as an offshoring variable which does not reflect the core concept of offshoring. To overcome this limitation, this study uses WIOD to calculate offshoring index, combines it with Korea's firm-level data, and studies the impacts of financialization and offshoring on real investment.

Ⅲ. Empirical Methods

1. Data: World Input-Output Database (WIOD) and KIS-Value

To calculate the offshoring index this paper collected data for intermediaries, outputs, imports and exports of Korea with the rest of the world from the World Input-Output Database (WIOD) 2016 Release in which data collected from 43 countries are collated and categorized into 53 sectors according to the International Standard Industrial Classification (ISIC) Revision 4 over the period 2000-2014. We extract the data for thirteen manufacturing sectors and collate them. One of benefits using the WIOD 2016 is that we can avoid a problem caused by the assumption that all industries in an economy has the same imports share of a certain input. The WIOD 2016 has partly solved this problem by calculating directly the share of imports goods that go to intermediate consumption, final consumption and gross fixed capital formation (Timmer et al., 2016; Dietzenbacher et al., 2013).

The financialization variables are collated by using the firm-level data collected from the KIS-Value Database from National Information and Credit Evaluation (NICE), an agency providing financial information on all firms included in KOSPI and KOSDAQ for the period 2000-2014.[2] Firms are classified by according to the ISIC Revision 4 that is adopted in the WIOD 2016 to keep consistency. After excluding firms that have incomplete data, we construct an unbalanced panel data set composed of 16,734 observations from 1,195 firms, and then combine this set with the WIOD 2016. In

2) According to an anonymous commenter, it is notable that the data discontinuity due to accounting changes around 2012 should be considered.

addition, large firms and SME were classified based on capital of 8 billion won and 300 employees according to KIS-Value Database.

2. Econometric Methods

Traditional investment functions have been based on acceleration models or models derived from Euler equations.[3] The following dynamic investment function has developed to measure the impacts of financialization and offshoring variables on real investment.

$$\begin{aligned}(I/K)_{i,t} &= \alpha_1 (I/K)_{i,t-1} \\ &+ \alpha_2 (S/K)_{i,t-1} + \alpha_3 (\pi/K)_{i,t-1} \\ &+ \alpha_4 (D/K)_{i,t-1} + \alpha_5 (Di/K)_{i,t-1} \\ &+ \alpha_6 (\pi^f/K)_{i,t-1} + \alpha_7 (fa/K)_{i,t-1} \\ &+ \alpha_8 (OI\ index)_{t-1} + e_{i,t} \ ,\end{aligned}$$

where I denotes real investment measured by the increase in tangible fixed assets, K tangible fixed assets, S sales, π net income or profits, D debts, Di dividend payments, πf the income generated from financial assets measured by interest earnings, fa the purchase of financial assets measured by the sum of short-term securities and short-term financial commodities, and OI the offshoring index. The subscript i and t indicate an individual firm and the period of time and ei,t an error term. The variables are standardized by K to avoid potential heteroscedasticity entailed in using firm-level data. It is notable that the dependent variable-present real investment-is assumed to be affected by previous explanatory variables.

To measure the intensity of offshoring, we adopt the index developed by Feenstra and Hanson (1999) and commonly used in the field (Auvray and Rabinovich, 2017; Bogliacino, Guarascio and Cirillo, 2018; Milberg and Winkler, 2010; Milberg, 2008). The offshoring index takes the following form:

$$OI_{i,kr,t} = \sum_i \left(\frac{\text{imported inputs}}{\text{total non-energy inputs}} \right)_{i,kr,t}$$

Above Equation measures the share of imported inputs used in sector i in total non-energy inputs in sector i of Korea (kr) at time t. It is claimed that using imports data for inputs within the same industry is more likely to reflect the notion of off-shoring (Bogliacino, Guara-scio, and Cirillo, 2018). They, however, argue that the index they used is highly correlated with the index in which inputs across sectors are included. This paper includes inputs across sectors in calculating the index because of two reasons. Firstly, the actual data in the WIOD 2016 show that the interaction across sectors is negligible in terms of size and frequency. Secondly, we cannot entirely ignore the possibility that offshoring might happen across sectors.

This paper assumes the relationship between real investment and each explanatory variable as follows. The real investment at period (t-1) is included as an explanatory variable to reflect the continuity in real investment. Hence, present real investment is positively related to previous

3) For a detailed derivation of the investment function, refer to Bertero and Rondi (2002). Also, see Park Kyung-Do and Seoung-Pil Ahn (2018) for the cost of equity as a factor in deriving investment function.

real investment. Sales (S) captures the demand accelerator effect that results from that fact that the demand for capital goods of a firm is driven by the demand for its products. The increase in the demand for real investment is greater than that in the demand for products (Kim Woo-Cheol, 2007; Kang Byung-Goo and Hyo-Yong Sung, 2008). Therefore, previous S is assumed to have a positive relationship to present real investment. Profits (π) captures the impact of profits or net income on present real investment and it is assumed that an increase in previous profits results in an increase in present real investment. Debts (D) captures the influence of financial distress on real investment. It is expected that the higher the debt level in the previous period the lower present real investment.

Meanwhile, the impact of financialization on present real investment is captured by three variables-dividend payments, the purchase of financial assets, and the income generated from financial assets. As argued earlier, the increasing emphasis on share-holder interests pushes firms to increase dividend payments. This is likely to lead to slow down the accumulation of internal funds and a consequent decrease in real investment. It is expected that previous dividend payments (Di) is negatively correlated to present real investment. The purchase of financial assets (fa) is supposed to increase over the course of financialization, which is likely to crowd out real investment. Furthermore, the higher the income generated from financial assets (πf), the more accelerated the purchase of financial assets would occur. Therefore, it is expected that both fa and πf are negatively correlated to present real investment.

Empirical studies on developed countries support the proposed negative relationship whereas those on developing countries are inconclusive (Kim Myung-Rok, 2015; Demir, 2009). It is quite natural given that corporations are exposed to national specific business environment including the relationship to politics and the development of capital market. We may admit that the funds for real investment less frequently mobilized from internal reserves in developing economies than in developed economies. Another plausible conjecture is that the increase in dividend payments is likely to lead to a favorable market evaluation on the company such as it is actively engaged in business rather than crowds out real investment. It is intriguing to see how these conjectures regarding financialization and offshoring turn out in the context of Korean NFM. It also is possible that the improved returns from financial assets can lead to the expansion of investment resources, which can also increase current real investment (Demir, 2009; Milberg and Winkler, 2010). Therefore, the expected relationship between financialization and real investment is not straightforward.

Finally, the impact of offshoring on real investment is captured by the offshoring index (OI). As argued earlier, the cost-saving is one of the strongest motivations that lie behind offshoring. This implies that firms prefer utilizing external resources to augmenting internal production capacities via real investment expenditure given the cost-minimizing constraint. Hence, a negative correlation between offshoring and present real investment is expected.

Table 1. Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min
I/K	15,441	0.028	0.129	-7.471
S/K	16,618	1.029	0.651	0.000
π/K	16,731	0.030	0.168	-6.295
D/K	16,729	0.460	0.229	0.002
Di/K	16,734	0.007	0.012	0.000
πf/K	16,624	0.006	0.006	-0.009
fa/K	16,734	0.069	0.107	-0.055
OI	16,734	0.776	0.061	0.629

Notes: I: real investment in tangible fixed assets, K: tangible fixed assets, S: sales, π: profits, D: debts, Di: dividends, πf : income from financial assets, fa : financial assets and OI: the outsourcing index.

Table 2. Correlation Matrix

	I/K	S/K	π/K	D/K	Di/K	πf/K	fa/K	OI
I/K	1.000							
S/K	-0.017	1.000						
π/K	0.139	0.208	1.000					
D/K	-0.001	0.121	0.231	1.000				
Di/K	0.003	0.156	-0.308	-0.298	1.000			
πf/K	-0.065	-0.065	-0.029	0.140	-0.281	1.000		
fa/K	-0.035	-0.095	0.091	0.166	-0.357	0.580	1.000	
OI	-0.011	-0.043	-0.007	0.046	0.025	0.047	-0.028	1.000

Notes: I: real investment in tangible fixed assets, K: tangible fixed assets, S: sales, π: profits, D: debts, Di: dividends, πf : income from financial assets, fa : financial assets and OI: the outsourcing index.

The dynamic investment equation is estimated by employing the Difference Generalized Method of Moments (GMM) estimator proposed by Arellano and Bond (1991). This method solves the problem of endogeneity in the case of the dynamic panel model in which the lagged dependent variable is included as an independent variable as in the above equation. The GMM estimator is valid when the instrument variables are free from the over-identification problem and the error term is not serially correlated. The Hansen Test confirms that instrument variables of the model do not suffer the over-identification problem. The result from test, AR(1) and AR(2) shows that there is no autocorrelation problem in the error term.

〈Table 1〉 is the summary statistics of the variables and 〈Table 2〉 is the correlation matrix of them. The correlation of each variable is generally low, which implies that

Table 3. Estimated Impact of Financialization and Offshoring on Real Investment in all Sample Firms

Variable	(1)	(2)	(3)	(4)
(I/K)t-1	0.084***	0.101***	0.084***	0.102***
	(0.024)	(0.024)	(0.025)	(0.024)
(S/K)t-1	0.053***	0.053***	0.054***	0.053***
	(0.007)	(0.007)	(0.007)	(0.007)
(π/K)t-1	-0.001	0.003	-0.000	0.001
	(0.030)	(0.034)	(0.030)	(0.033)
(Di/K)t-1	0.274*	0.202	0.292**	0.223
	(0.149)	(0.148)	(0.148)	(0.148)
(D/K)t-1	-0.058**	-0.055**	-0.053**	-0.051**
	(0.023)	(0.023)	(0.023)	(0.023)
(πf/K)t-1	2.463***		2.503***	
	(0.527)		(0.524)	
(fa/K)t-1		0.175***		0.172***
		(0.021)		(0.021)
(OI)t-1			-0.161***	-0.160***
			(0.051)	(0.050)
Obs	12,867	12,937	12,867	12,937
Number of firms	1,195	1,195	1,195	1,195
Ar(1)	0	0	0	0
Ar(2)	0.906	0.635	0.884	0.642
Hansenp	0.570	0.694	0.249	0.354

Notes: I: Real investment in tangible fixed assets, K: Tangible fixed assets, S: Sales, π: Profits, D: Debts, Di: Dividends, πf : Income from financial assets, fa: Financial assets, OI: Outsourcing index. Obs.: Number of Observations, Ar(1), Ar(2): Test for first and second-order autocorrelation in the residuals, Hansenp: Hansen over-identification test

the model does not suffer the problem of multi-collinearity. A relatively high correlation-0.580-reported between income generated from financial assets and the purchase of financial assets is reasonable in economic sense. To avoid any possible multi-collinearity problem, this paper does not include both variables simultaneously in the same estimation equation.

IV. Econometric Results and Discussion

1. Econometric Results

〈Table 3〉 shows the empirical results of all firms using the dynamic investment function in the previous section. As expected, the real investment at period (t-1) shows a significant positive coefficient, which supports the continuity of investment. Sales (S) too is positively related to real investment, confirming the acceleration effect-an increase in sales leads to faster growth in real investment. Debts and real investment show a negative relationship as the debt burden makes firms to be reluctant to spend for real investment. Meanwhile, profits (π) fails to show a statistically significant

correlation to real investment, which contrasts with the frequently observed cases in developed economies.

For example, Orhangazi (2008) and Stockhammer (2004) show that there is a clear positive relationship between profits and real investment in developed economies

Table 4. Estimated Impact of Financialization and Offshoring on Real Investment in Large and Small-Medium Sized Firms

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(I/K)t-1	0.089***	0.094***	0.089***	0.094***	0.092**	0.099***	0.094**
	(0.023)	(0.024)	(0.023)	(0.024)	(0.036)	(0.037)	(0.037)
(S/K)t-1	0.070***	0.072***	0.070***	0.072***	0.041***	0.040***	0.041***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.008)	(0.008)	(0.008)
(π/K)t-1	-0.026	-0.031	-0.031	-0.037	0.004	0.002	0.005
	(0.043)	(0.049)	(0.041)	(0.046)	(0.017)	(0.016)	(0.017)
(Di/K)t-1	0.067	0.008	0.084	0.029	0.468**	0.426**	0.485**
	(0.202)	(0.187)	(0.206)	(0.192)	(0.189)	(0.189)	(0.189)
(D/K)t-1	-0.088**	-0.091***	-0.082**	-0.086***	-0.047*	-0.046*	-0.042*
	(0.035)	(0.030)	(0.033)	(0.029)	(0.024)	(0.024)	(0.024)
(πf/K)t-1	2.925**		2.821**		2.179***		2.203***
	(1.302)		(1.265)		(0.486)		(0.488)
(fa/K)t-1		0.193***		0.180***		0.124***	
		(0.031)		(0.031)		(0.026)	
(OI)t-1			-0.258**	-0.264**			-0.124**
			(0.106)	(0.105)			(0.051)
Obs	5,865	5,903	5,865	5,903	7,002	7,034	7,002
Number of firms	548	548	548	548	647	647	647
Ar(1)	0.00187	0.00292	0.00205	0.00300	0	0	0
Ar(2)	0.963	0.604	0.947	0.595	0.887	0.940	0.880
Hansenp	0.113	0.181	0.112	0.165	0.170	0.709	0.166

Notes: I: Real investment in tangible fixed assets, K: Tangible fixed assets, S: Sales, π: Profits, D: Debts, Di: Dividends, πf : Income from financial assets, fa: Financial assets, OI: Outsourcing index. Obs.: Number of Observations, Ar(1), Ar(2): Test for first and second-order autocorrelation in the residuals, Hansenp: Hansen over-identification test

because firms often use their internal reserves to fund real investment. This unclear relationship between profits and real investment probably reflects that debt financing, instead of utilizing internal reserves, is the common practice in mobilizing real investment in Korea.

On the other hand, financialization variables-dividend payments, the purchase of financial assets, and the income generated from financial assets-carry positive coefficients, which is different from the study on developed countries. Firstly, the dividend payments variable shows a positive relationship to real investment. This contrasts to the experience of the firms in developed countries, implying that the impact of financialization on real investment is not captured by dividend payments of firms in Korea. Instead, the increase in dividend payments serves as a positive signal of good corporate earnings to the capital market participants. So that the firm can easily generate funds for further real investment. A similar interpretation is suggested by Seo Hwan-Joo, Han-Sung Kim and Joon-Il Kim (2016). They explain that it was difficult to find a negative relationship between dividend payments and real investment in their sample of Korean firms. This result reflects that the influence of shareholders on firm's investment decision is relatively limited in Korea compared to what has observed over the course of financialization in developed economies.

It is also remarkable that both the

purchase of financial assets and the returns on financial assets in time (t-1) show a positive relationship to current real investment. As explained above, there is a possibility of an increase in real investment because the increase in financial profit leads to the availability of funds for investment (Demir, 2009b; Milberg and Winkler, 2013; Orhangazi, 2008). Kim Myung-Rok (2015, 24), applying this argument to the Korean case, asserts a company may accumulate financial assets in preparation for real investment in the next periods. If this is the case, the increased purchase of financial assets should not be read as evidence of financialization, and the relationship between financial assets and real investment is either insignificant or positive.

Lastly, the offshoring index shows a negative relationship to real investment as expected. The expansion of offshoring means that firms employ external resources through contracts or relocate production facilities abroad as an immediate response to the profit squeeze pushed by maximizing shareholder value. This paper conjectures that the stagnant real investment of Korean NFCs has not been free from offshoring and this empirical outcome advocates that the conjecture of this paper is highly probable.

Furthermore, this paper assumes that firm's real investment is affected by the pressure from shareholders, which inevitably relies on firm size. For example, Orhangazi (2008) argues that the larger the firm size the greater the negative relationship between financialization and real investment. We investigate whether firm size is a significant factor that affects firm's real investment in the context of financialization and offshoring in Korea. It is reasonable to assume that SME have fewer idle funds that can be spent for real investment that large firms have and therefore, SME are more likely to redirect the income generated from financial assets to the funds for real investment than large firms are. As a result, an increase in the income generated from financial assets does not necessarily lead to a decrease in real investment as commonly argued in the financialization discourse (Kim, Myung-Rok, 2015).

To investigate the difference that can be caused by firm size, this paper divides the sample firms into two groups-SME group and large-sized firm group. Estimation results are reported in 〈Table 4〉 in which Model (1)-(4) are run against the large-sized firm group and Model (5)-(8) against SME firm group. As this paper expects, the two groups show differences. First, the positive relationship between dividend payments and real investment is only observed in the SME group whereas statistically insignificant relationship or a negative relationship is observed in the large firm group. This suggests that real investment of large firms is more reactive to the pressure from shareholders who put their priority to a bigger amount of dividend payments to them. Firm size is a factor that can effectively influence firm's real investment when it is considered together with the pressure from shareholders. Second, the coefficient of the income generated from financial assets is greater In SME group than in large firm group. This implies that SME are more likely to divert their revenue generated from financial assets to the funds for real investment because of their limitation in hoarding excess funds as Kim Myung-Rok (2015) argues. Last, offshoring

crowds out real investment in a greater degree in the large firm group than in the SME group. This implies that large firms have strategically chosen either relocating their production facilities to abroad or diverting their supply chains from domestic partners to foreign ones given increasing global competition and profit squeeze. This results in a larger decrease in real investment in large firm group than in SME group.

2. Discussion

As we examined above not all empirical results are straightforward to draw a unilateral conclusion regarding the relationship between firm's real investment and financialization and offshoring. We would like to discuss some important features further, which will help set further research agenda.

Firstly, financialization variables carry positive signs in Korea, which deserves explanation. Existing studies on the matter of financialization in developed countries in which financialization-related variables shows negative signs assume that financialization and offshoring have happened to serve shareholders short-run interest because the long-run expected returns on real investment is exposed to higher uncertainty to guarantee shareholders interest. Hence, both are likely to hamper real investment expenditure. To explain the difference in Korea that we observe above, we must consider that firms are in different position in global value chains in terms of resource procurement, relocation of production facilities, and allocating fabrication and non-fabrication tasks to name a few and their best strategy is unlikely to be identical.

As we examined, firm size also is an important factor that effectively affect firm's real investment decision. We must ask whether shareholders are influential enough to make firms revise long-term investment plan in Korea. Although there is no direct indicator, it is argued that the share of domestic and foreign institutional investors has increased over the last decade in Korea (Kim Myung-Rok, 2015) and it is not negligible. The recent experience of Hyundai Mobile Group and Samsung Electronics might show that the influence of owners has been weakened, which possibly deters the long-term investment plans that are intrinsically risky. The shareholder's influence over the firm's decision marking is likely to be stronger and financialization have a negative impact on firm's real investment in the large firm group. In contrast, it is more common to see that owners and managers are overlapped (owner-cum-manager) in SME governance, which would reduce the influence of shareholders on firm's decision making. As a result, real investment in the SME group is less dependent upon shareholder interest and so is the real investment in this group.

Meanwhile, a revision on the irrelevance of profits to real investment that we examined earlier may need. Offshoring may help improve profits but whether the improved profitability would lead to higher real investment is obscure. As reported in Lee and Gereffi (2015) and Serfati (2008), if a firm chooses to outsource mainly because of low production costs occurred in outsourced countries, the firm may not need to enhance its real investment. However, if

a firm outsources a production unit only and still operates core unit such as R&D and products/process design in domestic country, then the improved profits would be spent in real investment. Hence, the improved profitability does not always lead to higher real investment.

Vietnam's experience provides an indirect evidence that offshoring does not necessarily either increase or decrease real investment at least in the medium run. The share of local Vietnamese firms in GVCs is just around 26% and the rest 74% is taken by MNCs and MNCs-related foreign firms operated in Vietnam (UNIDO and MPI, 2012). This implies that MNCs have used Vietnam as an assembly base whose main comparative advantage lies in low labor cost. As a result, MNCs has increased their real investment in Vietnam in the form of foreign direct investment and this new production facilities must have contributed to improve their profitability. At the same time these MNCs operate their core unit either in other Southeast Asian countries such as Singapore, Thailand and Malaysia or in their home country. A recent study argues that these countries have shown premature de-industrialization because local firms in these economies have engaged in upstream activities such as R&D and design and downstream activities such as sales and marketing instead of in simple fabrication in GVCs (Vries et al., 2019).

It is not deniable that offshoring is closely related to profit squeeze. Some firms might be forced to choose offshoring to solve profit squeeze through cost-saving. We may call this a myopic response or strategy. Others, however, might choose offshoring as part of their global corporate strategies which surely include cost-saving but also other long-term purposes.

V. Concluding Remarks

This paper empirically tests various hypotheses that are related to how NMCs real investment in Korea has been influenced by financialization and offshoring by combining firm-level data and industry-level data over the period 2000-2014. The remarkable findings are summarized as follows. First, there is a positive relationship between dividend payments and real investment. This suggests that the dividend payments in Korea, contrary to the case of developed countries, is not a variable that captures the impact of financialization on real investment. Second, the purchase of financial assets and the returns on financial assets are positively related to real investment. This implies that funds mobilized from the returns on financial assets is likely to facilitate rather to crowd out real investment. Third, offshoring index as expected show a negative relationship with real investment. Profit squeeze forces firms to outsource production process to external production entities instead of improving their own production facilities which can be achieved through extending real investment. Finally, the same test is conducted by grouping samples firms into the SME group and the large firm group. The impact of dividend payments becomes insignificant in the large firm group. This indicates that both groups are under the influence of shareholder's pressure but in a different extent. The real investment is deteriorated more severely by

offshoring in the large firm group. This suggests that the large firm group is widely exposed to competition and profit squeeze and offshoring is the outright response of these firms.

On the other hand, the purchase of financial assets does not necessarily deter real investment. We have found that real investment is positively related to the purchase of financial assets and the income generated from them. This shows that there are various channels that financialization and offshoring affect firm's real investment. Furthermore, this suggests that it is risky to carelessly generalize the empirical results drawn from the experience of developed economies. For example, as this paper examines adding firm size factor can lead to meaningful different interpretation regarding firm's real investment. Firm size is just one of important factors that effectively change firm's investment behavior. Future study must consider this complexity in analyzing how firm's real investment is affected by financialization and offshoring.

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